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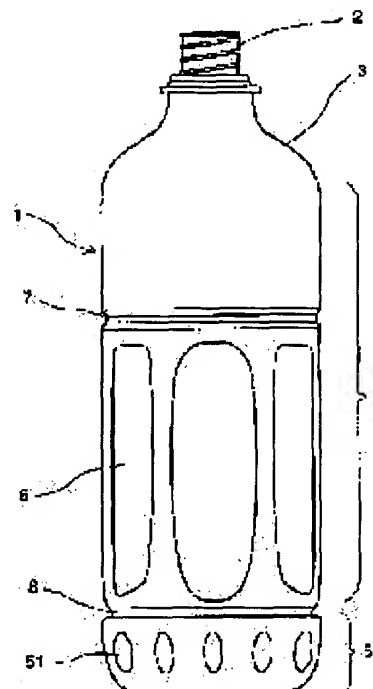
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(54) PLASTIC-MADE BOTTLE WITH REINFORCED BOTTOM**(57)Abstract:**

PURPOSE: To improve the rigidity of the bottom part of a container and prevent its deformation resulting from the contact between heels by providing a plurality of bottom reinforcing parts consisting of recessed or raised parts peripherally near the lower end of the wall surface of the bottom part.

CONSTITUTION: A plurality of elliptical or circular recessed reinforcing parts 51 are provided peripherally near the lower end of a bottom part 5 of a bottle 1. Although the number of the reinforcing parts varies with the size and shape, it is preferably from 15 to 25. They may be arranged parallel to the axis of the bottle or at an angle thereto. The length of the reinforcing part 51 is set at 10-90% of the height of the side of the bottom part 5 of the bottle 1 and its width is set at 0.5-90% of the overall circumference of the bottom part 5. In this case, the reference side of the bottom part refers to the side between the bottom part 5 and a lateral groove 8 if so formed and the side of a diameter-enlarged part formed as the bottom part in a case without the lateral groove 8.

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CLAIMS

[Claim(s)]

[Claim 1] The bottle made from bottom reinforcement plastics characterized by preparing two or more bottom reinforcement sections which consist of a crevice and/or heights near the soffit of the wall surface of the aforementioned bottom in the hoop direction in the bottle made from plastics which consists of the mouth section, a shoulder, a drum section, and a bottom.

[Claim 2] The bottle made from bottom reinforcement plastics with which each of the aforementioned bottom reinforcement section is characterized by having the length of the height of the aforementioned bottle bottom side lengthwise [10 - 90% of], and 0.5 - 90% of breadth of the perimeter of a bottle bottom in the bottle made from bottom reinforcement plastics according to claim 1.

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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[Industrial Application] Especially this invention relates to the bottle made from plastics with which the pars basilaris ossis occipitalis was reinforced about the bottle made from plastics.

[0002]

[Description of the Prior Art] The biaxial-stretching-blow-molding bottle which consists of a saturated-polyester resin represented by the polyethylene terephthalate has extremely excellent transparency and surface gloss, is beautiful and excellent in gas barrier nature, moisture impermeability, shelf life, etc. moreover, it is easy disposability, in order for there to be also little generation of heat at the time of combustion and not to hurt a furnace -- etc. -- it has many advantages therefore, various potable water, a seasoning, and an alcoholic beverage -- it is widely used for the container (bottle) of other food grades etc.

[0003] In processes, such as restoration of contents, as for such a biaxial-stretching-blow-molding bottle, a bottle makes a train, it may stand in a line, and the heels of a bottle may contact. If the intensity of a pars basilaris ossis occipitalis is not enough at this time, a depression is generated, and when the inclination is remarkable, there is a problem of remaining as permanent deformation. Moreover, the heels of a bottle may contact also at the time of conveyance and exhibition, and it is a plain-gauze cone in that a depression is generated similarly ****. For this reason, a bottle with which the pars basilaris ossis occipitalis was fully reinforced is desired.

[0004] As such a bottle made from pars-basilaris-ossis-occipitalis reinforcement plastics, it craters and JP,62-52034,A is indicating what has the panel and the annular rib located under the bottle book soma prolonged in the shaft orientations of a bottle book soma. Although strengthening of a certain amount of pars basilaris ossis occipitalis was attained by the above-mentioned bottle, it cannot be said that it is still reinforced fully.

[0005] Therefore, the purpose of this invention is offering the bottle made from plastics which the pars's basilaris ossis occipitalis is fully reinforced, has, and a pars's basilaris ossis occipitalis does not deform by contact of the heels of a bottle etc.

[0006]

[Means for Solving the Problem] When preparing two or more pars-basilaris-ossis-occipitalis reinforcement sections which this invention person becomes from a crevice and/or heights near the soffit of the pars-basilaris-ossis-occipitalis wall surface of the bottle made from plastics as a result of wholeheartedly research in the hoop direction in view of the above-mentioned purpose, it found out that a pars basilaris ossis occipitalis was reinforced sharply, and hit on an idea to this invention.

[0007] That is, the bottle made from plastics of this invention which consists of the regio oralis, a shoulder, a drum section, and a pars basilaris ossis occipitalis is characterized by preparing two or more pars-basilaris-ossis-occipitalis reinforcement sections which consist of a crevice and/or heights near the soffit of the wall surface of the aforementioned pars basilaris ossis occipitalis in the hoop direction.

[0008]

[Example] this invention is explained in detail with reference to an accompanying drawing based on an example. Drawing 1 is the front view of the bottle made from plastics by one example of this invention. A bottle 1 consists of the mouth section 2, a shoulder 3, a drum section 4, and a bottom 5. In addition, the panel 6 for ***** prepared in the usual biaxial-stretching bottle and Yokomizo 7 for reinforcement, and 8 grades can be prepared suitably if needed.

[0009] Near the soffit section of a bottom 5, two or more reinforcement section 51 -- concave with elliptical is prepared in the hoop direction. Although the number of the above-mentioned reinforcement section 51 changes with the size, configurations, etc., it is about 15-25 pieces preferably. Moreover, although it may be arranged in parallel perpendicularly, depending on the case, to the vertical axis, each reinforcement section inclines aslant and may be

arranged.

[0010] Moreover, although each size of the reinforcement section 51 is suitably set up according to the size (height and perimeter of a bottom) of a bottle, as for the length (lengthwise) of the aforementioned reinforcement section 51, it is desirable to carry out to about 10 - 90% of the height of the bottom side of a bottle, and it is desirable to consider as 25 - 50% especially. Moreover, about breadth (width of face of a hoop direction), it is desirable to carry out to about 0.5 - 90% of the length of the perimeter of a bottle bottom, and it is desirable to consider as 25 - 75% especially. the aforementioned reinforcement section 51 -- the height and perimeter of a bottle -- receiving -- the above -- the reinforcement effect of sufficient bottom is not acquired with it being out of range, and it is not desirable. In addition, the bottom side of a bottle means the side between Yokomizo 8 and the bottom of a bottle, when Yokomizo 8 has, and when there is not Yokomizo 8, it means the side of the diameter expansion section formed as a bottom.

[0011] Although especially a limit does not have the configuration of the reinforcement section 51 and it can be made into various things, such as circular, an ellipse form, a triangle, and a square, considering as a longwise ellipse form is desirable. Moreover, in three dimensions, a concave or convex are sufficient and the concave thing and the convex thing may be arranged by turns as a whole. The thing of a concave [remain / easily / liquid / especially after pouring in] is desirable.

[0012] About the part in which such the reinforcement section 51 is formed, in order to fully reinforce a bottle bottom, it is near the soffit of a bottom, and it sets up suitably with the size of each bottle etc. For example, from the upper limit and soffit of the bottom side of a bottle, the upper limit and soffit of the reinforcement section 51 should just prepare about 1 to 95%, respectively, so that it may come inside about 25 to 75% more preferably.

[0013] As a resin which forms such a bottle made from bottom reinforcement plastics, polyester is suitable. As polyester resin, the thermoplastics which consists of a saturation dicarboxylic acid and saturation dihydric alcohol can be used. As a saturation dicarboxylic acid, they are a terephthalic acid, an isophthalic acid, a phthalic acid, and naphthalene. - It is 1 and 4. - Or 2, 6-dicarboxylic acid, a diphenyl ether -4, 4' - Alicycle group dicarboxylic acids, such as aliphatic dicarboxylic acids, such as aromatic dicarboxylic acids, such as a dicarboxylic acid, diphenyl dicarboxylic acids, and JIFENOKISHIETANJI ethane dicarboxylic acids, an adipic acid, sebacic acid, an azelaic acid, Deccan -1, and 10-dicarboxylic acid, and a cyclohexane dicarboxylic acid, etc. can be used. Moreover, as saturation dihydric alcohol, alicycle group glycols [, such as aliphatic glycols, such as ethylene glycol, a propylene glycol a trimethylene glycol a tetramethylene glycol, a diethylene glycol, a polyethylene glycol, a polypropylene glycol, a polytetramethylene glycol, a hexamethylene glycol, a dodeca methylene glycol, and neopentyl glycol and cyclohexane dimethanol,], 2, and 2-screw (4'-beta-hydroxy ethoxy phenyl) propane and other aromatic diols can be used. Desirable polyester is a polyethylene terephthalate which consists of a terephthalic acid and ethylene glycol.

[0014] the poly ESURU resin -- intrinsic viscosity 0.5-1.5 -- desirable -- 0.55-0.8 It has the value of the range. moreover, such polyester is manufactured by the melting polymerization -- the thing heat-treated in reduced pressure processing or inert gas atmosphere under the temperature of 180 - 250 ** or the thing which solid state polymerization was carried out [thing] and reduced the content of the oligomer and the acetaldehyde which are a low-molecular-weight polymerization object is suitable

[0015] in addition -- the inside of polyester resin -- additives, such as a stabilizer, a pigment, an antioxidant, a heat deterioration inhibitor, an ultraviolet-rays degradation inhibitor, an antistatic agent, and an antimicrobial agent, and other resins -- proper quantity ***** -- things are made

[0016] The bottle made from bottom reinforcement plastics using the above-mentioned resin can be easily manufactured by the well-known biaxial-stretching-blow-molding method using the metal mold of the configuration which can form the bottom reinforcement section.

[0017] As mentioned above, although this invention was explained with reference to the accompanying drawing, this invention can give various change, unless it is not limited to this but deviates from the thought of this invention. For example, the method of the configuration of the bottom reinforcement section, an installation position, and an array etc. can be suitably changed in consideration of the size of a bottle, a configuration, a use, appearance, etc.

[0018]

[Effect of the Invention] Since two or more bottom reinforcement sections which consist of a crevice and/or heights are prepared in the hoop direction near the soffit of the bottom wall surface of the bottle made from plastics in this invention as explained in full detail above, the bottom of the bottle obtained is reinforced sharply.

[0019] The bottle of such this invention is suitable for bottles, such as bottles, such as various drinks, juice which performs path tera IJINGU especially by hot fill and a hot shower, and a carbonated drink.

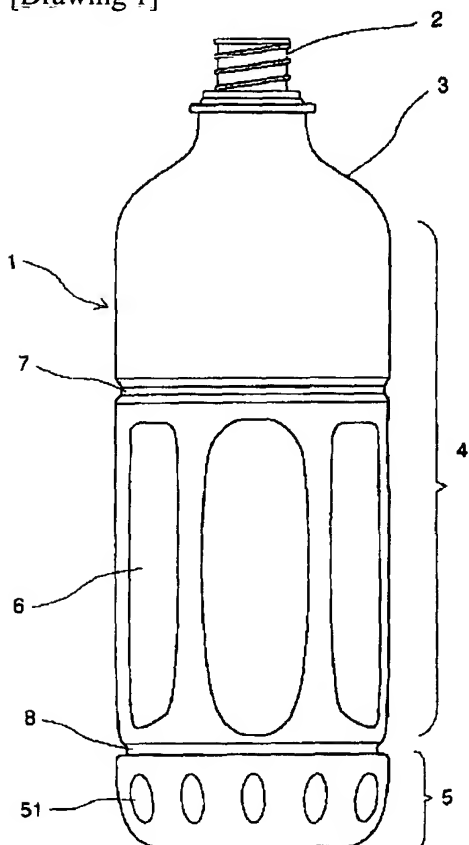
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DRAWINGS

[Drawing 1]



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